ABSTRACT

A system and method for predicting the effect of patient self-care actions on a disease control parameter. A future disease control parameter value $X(t_j)$ at time t_j is determined from a prior disease control parameter value $X(t_i)$ at time t_i based on an optimal control parameter value $R(t_j)$ at time t_j, the difference between the prior disease control parameter value $X(t_i)$ and an optimal control parameter value $R(t_i)$ at time t_i, and a set of differentials between patient self-care parameters having patient self-care values $S_M(t_i)$ at time t_i and optimal self-care parameters having optimal self-care values $O_M(t_i)$ at time t_i. The differentials are multiplied by corresponding scaling factors K_M. The system includes an input device for entering the patient self-care values $S_M(t_i)$. A memory stores the optimal control parameter values $R(t_i)$ and $R(t_j)$, the prior disease control parameter value $X(t_i)$, the optimal self-care values $O_M(t_i)$, and the scaling factors K_M. A processor in communication with the input device and memory calculates the future disease control parameter value $X(t_j)$. A display is connected to the processor to display the future disease control parameter value $X(t_j)$ to a patient.